

Appl. No. 10/530,634

Attorney Docket No. 10808-231

I. Listing of Claims

1. (Currently Amended): A field-effect transistor with local source-drain insulation, having
 - a semiconductor substrate;
 - a source depression and a drain depression, which are formed in a manner spaced apart from one another in the semiconductor substrate;
 - a depression insulation layer, which is formed at least in a bottom region of the source depression and of the drain depression;
 - an electrically conductive filling layer, which is formed for realizing source and drain regions and for filling the source and drain depressions at a surface of the depression insulation layer, wherein the electrically conductive filling layer has a seed layer for improving a deposition in the source and drain depressions, the seed layer comprising silicon or SiGe;
 - a gate dielectric, which is formed at a substrate surface between the source and drain depressions; and
 - a gate layer, which is formed at a surface of the gate dielectric, wherein the source and drain depressions have, in an upper region, a widening with a predetermined depth for realizing defined channel connection regions.
2. (Previously Presented): The field-effect transistor as claimed in claim 1, wherein the depression insulation layer has a depression sidewall insulation layer,

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which is formed in a sidewall region of the source and drain depressions but does not touch the gate dielectric.

3. (Cancelled).

4. (Cancelled).

5. (Previously Presented): The field-effect transistor as claimed in claim 1, wherein a gate insulation layer is formed at sidewalls of the gate layer.

6. (Previously Presented): The field-effect transistor as claimed in claim 1, wherein the field-effect transistor is bounded by shallow trench isolations.

7. (Previously Presented): The field-effect transistor as claimed in claim 1, wherein the field-effect transistor has lateral structures < 100 nm.

8. (Previously Presented): The field-effect transistor as claimed in claim 1, wherein the source and drain depressions have a depth of approximately 50 nm to 300 nm.

9. (Previously Presented): The field-effect transistor as claimed in claim 2, wherein the depression sidewall insulation layer extends into a region below the gate dielectric.

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10-21. (Cancelled).

22. (New): The field-effect transistor as claimed in claim 2, wherein a gate insulation layer is formed at sidewalls of the gate layer and a spacer is located laterally between the gate insulation layer and the depression sidewall insulation layer.

23. (New): The field-effect transistor as claimed in claim 2, wherein the spacer comprises silicon nitride.

24. (New): The field-effect transistor as claimed in claim 2, wherein the spacer extends into the widening.